

## **STD Update for Clinicians and Counselors**

**Satellite Conference  
Wednesday, March 10, 2004  
2:00-4:00 p.m., Central Time**

Produced by the Alabama Department of Public Health  
Video Communications Division

## **Faculty**

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Atlanta, Georgia

## **Objectives**

- Describe the role of the women's health programs in screening for STDs/HIV.
- Identify infection trends, causative organisms, incubation period, s/s, diagnosis, complications and treatment for common STDs and HIV.
- List three factors for and three preventive measures against acquiring a STD and HIV.

## **Objectives** (continued)

- Discuss the relationship between genital warts and cervical cancer.
- Discuss the relationship among fertility, ectopic pregnancy, chronic pelvic pain, STDs and HIV and the neonate.
- Describe effective counseling measures for pre and post test counseling and disclosure.

## **Women's Health Programs**

- Provide client friendly services
- Establish rapport with patient population to facilitate communication and elicit accurate sexual disease history
- Assess client accurately and refer to other community resources
- Participate in ongoing educational seminars

## **Sexually Transmitted Diseases Special Population**

- Women suffer disproportionately from STDs/HIV
- Adolescents are at high risk for STDs/HIV
- Persons with multiple sex partners
- Commercial sex workers

### **Sexually Transmitted Diseases Special Population** (continued)

- Men who have sex with men (MSM)
- Intravenous drug users
- Individuals that practice unsafe sex
- Individuals with a history of previous STD/HIV infections
- Unplanned pregnancy

### **Special Population**

- Women at highest risk for most STDs/HIV
  - Sexually active
  - Women accounted for more than 32% of adult cases of AIDS in the U.S.
  - 1999 study, Minkoff found that of 262 HIV infected women, 46.9% had at least one incidence of a gynecologic condition

### **Special Population Adolescents**

- A quarter of all new STD cases occur in ages 15-19 and 2/3 of all cases occur in ages 15-24
- More likely to have multiple partners
- More likely to have unprotected intercourse
- Female teenagers are also more susceptible to cervical infections
- Chlamydia is more common among teenagers

### **Special Population Commercial Workers**

- Multiple partners
- More likely to engage in risky sexual acts
- More likely to use illicit substances
- Less likely to have access to healthcare

### **Patient Centered Counseling and Testing**

- School based Chlamydia screening and treatment program with urine LCR testing
- Outreach programs-mobile vans to treat and screen, health fairs
- Patient delivered medication programs for partners' treatment

### **Patient Centered Counseling Testing-Screening/Techniques**

- Screener needs thorough knowledge of STDs
- Thorough knowledge of facility and state laws
- Development of an effective screening tool

### **Patient Centered Counseling Testing-Screening/Techniques**

(continued)

- Utilize effective testing methods
- Non-judgmental, non bias attitude
- Provide for a comfortable, workable and confidential testing location

### **Patient Centered Counseling Screening Tool**

- Work the tool, don't let the tool work you
- Just the facts
- Anonymous
- Age, gender, socially appropriate
- Screen for unhealthy lifestyle practices

### **STD – Screening/Testing Special Population**

- Routinely screen all sexually active women age  $\leq 25$  for all STDs, whether or not they are pregnant
- Personal risk depends on the number of risk markers
- Screening early in pregnancy provides increased opportunities to improve pregnancy outcome

### **STD – Screening/Testing Special Population**

(continued)

- The optimal interval for re-screening women should be based on complaints, changes in sexual partners, young age and other risks

### **Sexually Transmitted Diseases**

- STDs are very common-more than 16 million new cases annually
- STDs have serious consequences
- STD treatment helps prevent the spread of HIV
- STDs are preventable
- Complex interaction of medical, social, economical and biological factors

### **Sexually Transmitted Diseases**

(continued)

- STDs are the results of more than 40 different microbes
- Human genital tract is the reservoir
- STDs rarely survive outside the body
- Transmission occurs during sex, gestation, or birth

## STD Syndromes

- **Genital Ulcer**
  - Warts
  - Herpes/HPV
- **Discharge**
  - Gonorrhea
  - Chlamydia
- **Vaginitis**
  - Trichomoniasis

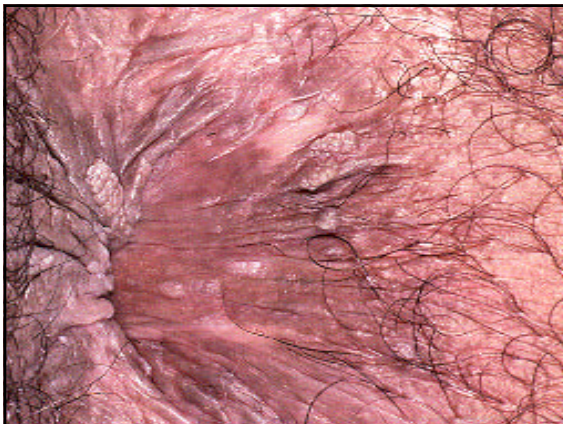
## Genital Ulcer - HPV Warts

- Organism: Virus-Human Papilloma Virus
- Prevalence: >30% of population
- Transmission: Direct sexual contact
- Incubation: Average 2-3 months

## Genital Ulcer - HPV Warts

(continued)

- Symptoms: Non-cancer types of HPV 6,11 are raised, rough or smooth "bumps" on the genitalia that may itch/burn. Cancer HPV 16, 18, are microscopic and have no symptoms
- External warts are a marker of sexual risk
- Diagnosis: Clinical Manifestations (acetic acid), abnormal Pap Smear



### Genital Warts - HPV Complications

- Increase risk of cervical cancer
  - Types that cause cervical cancer, don't usually cause warts
- Reproductive
- Cosmetic
- Self-esteem

### Genital Warts-HPV Treatment

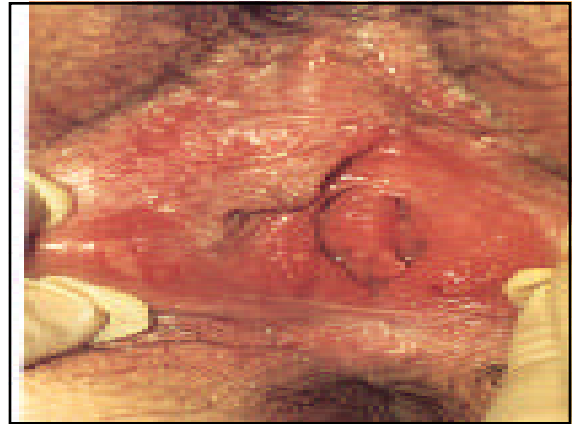
- Treatment: All have high failure rates
  - Observation- 20% spontaneous regress
  - Destructive- cryotherapy (freeze), laser surgery, TCA
  - Immune system mediators- interferon alpha, Tagament, Aldara (home treatment)
- Complications: Cervical Cancer- HPV found in over 90% Ca. Microscopic HPV types 16, 18, 45, 56



### Herpes (HSV II )

- Syndrome: Genital Ulcers
- Organism: Virus-Herpes Simplex Virus
- Prevalence: 1 million new cases annually
  - (> 45 million total in U.S.)





## Herpes (HSV II) Complications

- Highly contagious
- Chronic, persistent, often debilitating ulcers
- Reproductive
- Cosmetic
- Self-esteem
- Life changing
  - Sexuality
  - Neonatal

## Herpes: Treatment

- Treatment: No cure for herpes but . . .
  - Antiviral medications can decrease severity and frequency
  - Acyclovir (Zovirax) -
    - 400mg PO t.i.d. for 7-10 day
    - 200 mg PO 5x/day for 7-10 days
  - Famciclovir (Famvir)-
    - 250 mg PO t.i.d. for 7-10 days

## Herpes: Treatment (continued)

- Valcyclovir (Valtrex)-
    - 1000mg PO b.i.d. for 7-10 days
- Different dosages for initial treatment vs. recurrent or suppressive treatment
- Complications: Neonatal herpes and severe HSV infections with AIDS

## Gonorrhea

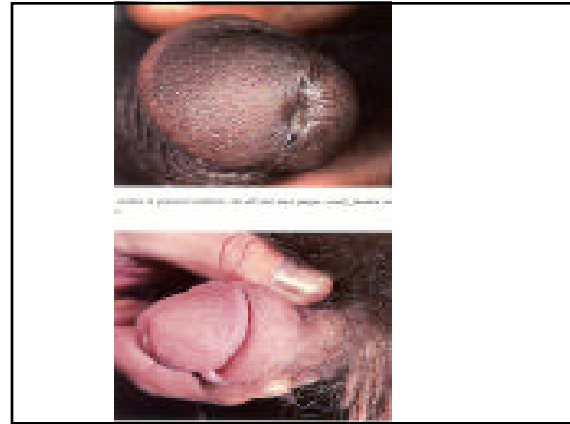
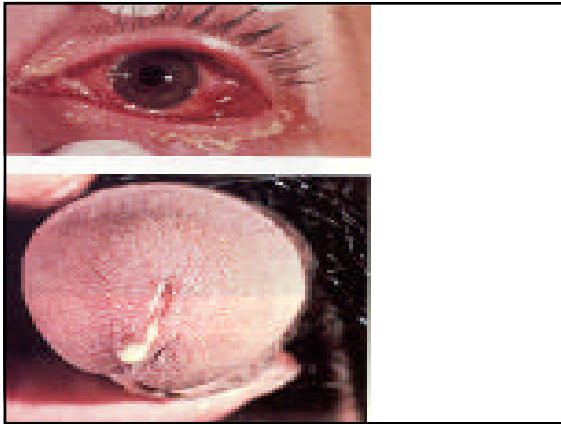
- Syndrome: Urethral or Cervical discharge
- Name: AKA “clap” and also “brunt”
- Organism: bacteria-Neisseria gonorrhea
- Prevalence: very common
  - (10,000 cases in the U.S.)

## Gonorrhea (continued)

- Transmission: direct contact with discharge
- Incubation: 3-5 days
- Symptoms: yellow discharge that burns
  - >30% male have no symptoms
  - >50% women have no symptoms

## Gonorrhea: FYI

- Ancient disease with written accounts as far back as 2637 BC
- U.S. rates increased in the mid-1960s to the mid-1970s
- Popularity had been over shadowed by the Chlamydia and HSV in the 80s
- Presently there are a little more than 1 million new cases annually
- Heterosexual, minority, illicit drug use and prostitution



### Gonorrhea: Treatment

- Treatment: Antibiotics (one pill or shot)
  - Suprax 400mg PO STAT (Cefixime)
    - no longer available
  - Ciprofloxacin 500mg PO STAT
  - Azithromycin 2gm PO STAT
  - Rocephin 250mg IM STAT (Ceftriaxone)
    - Ok with pregnancy

### Gonorrhea: Complications

- Sterility
- Infertility ( PID )
- Neonatal-illness and blindness
- Increase risk of contracting HIV

### Chlamydia

- C.psittact, C. pneumoniae, and C.trachomatis
- C.trachomatis- human reservoir
  - Ocular
  - Pulmonary
  - Enteric
  - Genital tract

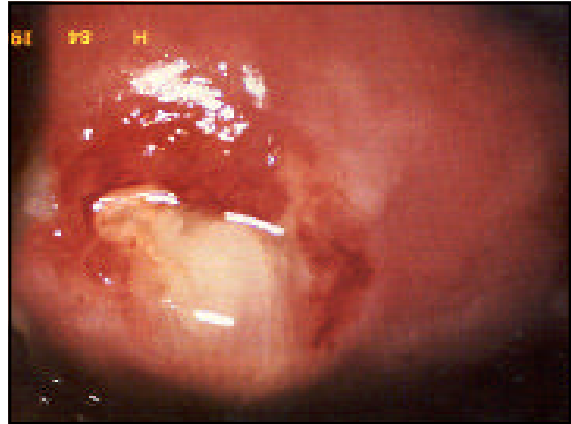
### Chlamydia (continued)

- In the early 20<sup>th</sup> century thought to have had a viral origin
- Bacteria with both a RNA and DNA complex
- Asymptomatic
  - Approximately 70%-80% women
  - Approximately 50% men
- Syndrome: Discharge
- Organism: Bacteria



### **Chlamydia** (continued)

- Prevalence: 3 million annually
- Transmission: Direct sexual contact
- Incubation: 1-3 weeks
- Symptoms: Most asymptomatic
  - Men: clear-white urethral discharge that may burn when urinating in the morning
  - Women: post-coital bleeding, abdominal pain, mucopurulent cervicitis



### **Chlamydia: Complications**

- 30%-50% of cases of nongonococcal urethritis
- Increased risk of HIV
- Endocervicitis
- Pelvic Inflammatory Disease (PID)
- Infertility
- Ectopic pregnancy
- Prematurity
- Increase perinatal mortality

### **Chlamydia: Complications** (continued)

- 60% of infants born to endocervically infected mothers are infected at the time of vaginal delivery
- Onset of Conjunctivitis-14 days post delivery
- Chlamydia pneumonia-4 to 7 weeks following delivery

### **Chlamydia: Treatment**

- Antibiotics
  - Azithromycin 1gm PO
  - Doxycycline 100mg PO x 7 days

## STD- Testing Technologies

### Batch Testing –

Laboratory based test that include:

- Culture
- NAAT's
- Nucleic acid hybridization

### Point of Care Test

- Gram Stain

## Culture Test

- N. Gonorrhoeae Culture-specimens are streaked on a selective medium. These mediums are inoculated and incubated at 35-36.5 degrees C in a atmosphere supplemented with 5% CO<sub>2</sub> and examined at 24-hour intervals for,  $\leq$  72 hours. Chocolate and equine and bovine blood are used in the medium to support the growth of the gonococcus.

## Culture Test (continued)

- C. trachomatis Culture- inoculation of a confluent monolayer of susceptible cells. These cells are then collected and transported. After 48-72 hours of intracytoplasmic inclusion that contains a substantial numbers of C. trachomatis reticulate body. These inclusions are then detected by fluorescein antibody staining that is specific for the major outer membrane protein (MOMP) of C. trachomatis.

## NAATs- The Gen-Probe APTIMA

- Uses transcription-mediated amplification to detect a specific 23s ribosomal RNA target
- Majority of commercial NAATs have been FDA cleared to detect endocervical swabs from women and urethral swabs from men and urine from women and men (facilitates screening venues)

## NAATs- The Gen-Probe APTIMA (continued)

- Rectal and oropharyngeal specimen collection with NAATs has limited evaluation and is not recommended

## Nucleic Acid Hybridization (Nucleic Acid Probe) Test

- Gen-Probe PACE-DNA probe zeros in on a specific sequence of C. trachomatis or N. gonorrhoeae rRNA hybridization with a similar rRNA that is present in the specimen
- Digene Hybrid Capture II assays-are specific for DNA sequence of C. trachomatis and N. gonorrhoeae

### **Nucleic Acid Hybridization (Nucleic Acid Probe) Test** (continued)

- Test advantages-Both tests allow storage and transport of specimen for  $\leq 7$  days without refrigeration before processing by the lab
- The only two nucleic assay tests FDA-cleared for *C.trachomatis* and *N.gonorrhoeae* testing

### **Point of Care Test *N.gonorrhoeae***

- Gram stain- the key tool for diagnosis of gonococcal urethritis in men. A gram stain for the presumptive diagnosis of *N.gonorrhoeae* infections is performed on thin smears of urethral exudate from men and is presumptively positive if the smear contains typical Gram-negative diplococci within polymorphonuclear (pmn) leukocytes.

### **Point of Care Test *C.trachomatis***

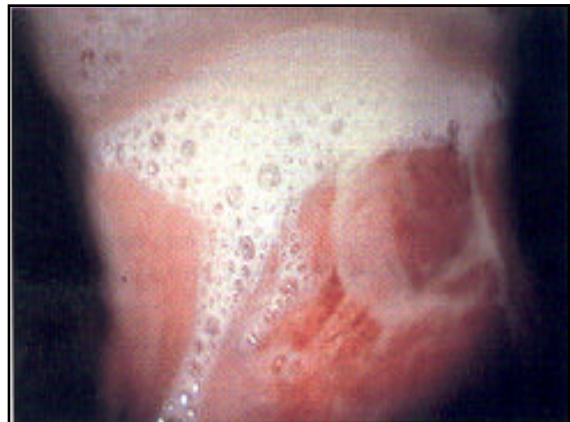
- Test can be performed within 30 minutes
- Does not require expensive or sophisticated equipment and are packaged as single unit test
- Test is classified under CLIA as test of moderate complexity

### **Point of Care Test *C.trachomatis*** (continued)

- Similar to EIAs these tests use antibodies against LPS that detect all three *Chlamydia* species
- Point of Care Test should not be selected if it is performed in the lab after the patient's visit

### **Trichomoniasis**

- Syndrome: Vaginitis
- Organism: Protozoa-*Trichomoniasis vaginalis*
- Prevalence: 5 million cases annually
- Transmission: sexually-rarely fomite
- Symptoms: Vaginal discharge that is frothy, white clear with itching and malodor



### **Trichomoniasis: Complications**

- Increase HIV risk
- Prematurity
- Documented cases of PID (possible) – very rare

### **Trichomoniasis**

- Treatment: Metronidazole 2gm PO

### **HIV**

What is it and how does it make people sick?

### **HIV and AIDS**

- HIV stands for “Human Immunodeficiency Virus”
- HIV is a virus (germ) that infects blood and damages your ability to fight disease
- AIDS stands for “Acquired Immune Deficiency Syndrome”
- AIDS is the disease caused by HIV. People with AIDS lose their ability to fight germs that can make them sick

### **How Do You Get HIV?**

- You can get HIV from the blood or certain other body fluids of an infected person
- When fluid that is infected with HIV gets into your blood, then you can get infected too
- HIV can be in:
  - Blood
  - Vaginal fluid
  - Semen/sperm
  - Breast milk

### **You Can Be Tested for HIV**

- A simple blood test
- Unless it has been 6 months since you became infected, a blood test may not show HIV. Retest every 3 months if you are at risk
- The standard test looks for a reaction to HIV from your immune system

### **Your Body's Immune System**

- The immune system works in the body to fight germs and keep you healthy
- T cells are the "soldiers" of your immune system
- T cells recognize germs in your body, and they work with other cells to destroy them

### **How Your Immune System Fights HIV**

- "Killer" T cells (CTLs) can find and destroy cells that are infected with HIV
- HIV infects "helper" T cells (CD4 cells)
- Helper T cells order "killer" T cells to do their job
- When the "helper" T cells are destroyed by HIV, the immune system does not know how to fight germs

### **There Is A War Between Your Body and HIV**

- Billions of viruses are created every day
- HIV attacks and infects your T cells
- Your immune system attacks and kills the T cells that have been infected with HIV

### **HIV Eventually Drains Your Immune System**

- When T cells are killed by HIV, they are replaced, but not as quickly as they are being killed
- HIV reproduces very fast
- Eventually, T cells fall too far behind and then cannot do their job of fighting germs

### **Treatment Slows the Dog**

- Treatment slows down the dog (HIV) so it can't run as fast
- When the dog runs slower, your viral load goes down
- When your viral load is down, you are doing better against HIV

### **When Viral Load Goes Up, Immunity Goes Down**

- When there are more HIV germs, they infect and kill more T cells
- T cells are needed to fight HIV and other germs
- Eventually your body cannot produce T cells as fast as they are killed by HIV

### **Three Main Types of Treatment Drugs**

1. NRTIs (nucleoside reverse transcriptase inhibitors)  
Work by interfering with the material that allows HIV to reproduce
2. NNRTIs (Non-NRTIs)  
Attack HIV in the same place as NRTIs but in a different way
3. PIs (protease inhibitors)  
Stop HIV from being assembled

### **Combination Therapy**

The best way to treat HIV is by using more than one kind of drug at a time.

Protease Inhibitor + NRTI + NNRTI

### **HIV: Treatment Fusion Inhibitors**

- Fuzeon- Condom for the CD4 cells
  - Inhibits the fusion of the HIV virus into the CD4 cells
  - Combination therapy
  - Adult/Children (age >6)

### **HIV: Vertical Transmission**

- 076 AZT study-decreased transmission rate by 70%
- 419 infants
- Combination therapy

### **HIV and Neonate**

- DNA/PCR testing at birth
    - (+) Immediate retesting
    - (-) Test is repeated @ 4 months
  - 18-24 months - confirmatory testing for the clearance of maternal antibodies/ELISA/WESTERBLOT
- Antiretroviral therapy for all (+) babies  
Viral loads < 400 undetectable

### **Summary: HIV Infection Is A Disease of the Immune System**

- HIV is a virus that infects blood
- HIV is passed from one person to another through blood or certain body fluids
- HIV reproduces very fast and attacks and kills T cells
- T cells are needed to fight HIV and other germs

**Summary:**  
**HIV Infection Is A Disease  
of the Immune System** (continued)

- Viral load measures how much HIV is in your blood and predicts how well you will do
- CD4 cell count measures how well your immune system fights germs

**Confidentiality Practical Steps**

- Avoid learning of contact
- Have the client disclose
- Consider shifting disclosure task to someone else  
HIV Confidentiality Statute
- Disclosing reputation
- Consequences of disclosing

**STDs/HIV: Conclusion**

- STDs/HIV are a significant public health problem. Healthcare professionals need to beware of advancements in treatments and screening methods.
  - Urine screening (DNA amplification test)
  - Mobile testing sites
  - Outreach programs
  - Patient education/condom distribution

**STDs/HIV: Conclusion**  
(continued)

- The best treatment however remains prevention. Prevention involves the use of condoms and limiting numbers of sexual partners.

**Upcoming Programs:**

**Preventing Sexual Coercion  
Among Adolescents (Part 2)**  
Thursday, March 18, 2004  
2:00-4:00 p.m., Central Time

**Chemical Risk Assessment  
in an Uncertain World**  
Tuesday, March 30, 2004  
12:00-1:30 p.m., Central Time

**For a complete listing of programs,  
visit our website:  
[www.adph.org/alphtn](http://www.adph.org/alphtn)**